From such regions too, and from the lake bottom, come the few species of Mollusca obtained. Only a single Lamellibranch was amongst these. Truly aquatic worms are represented solely by the Oligochæte *Paranais littoralis*, no leeches or Turbellaria being found, although they might well be expected to occur. A Polyzoan is fairly abundant, growing on the submerged stems of plants, or on the underside of rocks and boulders. It is a gymnolæmatous form, with a circular lophophore and eight tentacles.

Cordylophora lacustris, a form often associated with brackish water, grows luxuriantly on stones in shallow water. A much more interesting and quite unexpected discovery was that of a medusa and the hydroid form with which it is associated. The hydroid was obtained first, being dredged from the bottom in about a fathom of water: the medusa made its appearance in the lake in vast quantities at a somewhat later date. It appears to be a typical Anthomedusan, and has some resemblance to the marine genus *Sarsia*. Although the Birket-el-Qurun is now slightly brackish, it certainly was quite fresh within historic times, and it is not easy to suggest how such a characteristically marine organism should have found its way into the lake. It is curious to note that no fresh-water sponge was obtained by the expedition, although *Spongilla* occurs commonly in the Nile.

Algæ were collected throughout the lake, being scraped from the rocks and stones and the submerged stems of plants. Of the truly aquatic higher plants, *Potamogeton interruptus* and *Chara vulgaris* are both of some interest, as they show slight differences from the common form.

The expedition was undertaken at the request of Captain Lyons, F.R.S., Director General of the Egyptian Survey Department, which has recently paid a good deal of attention to the study of this lake and the whole Fayûm province.

2. The Duke of Bedford's Zoological Exploration in Eastern Asia.—VI. List of Mammals from the Shantung Peninsula, N. China. By Oldfield Thomas, F.R.S., F.Z.S.

[Received December 2, 1907.]

In March 1907 our President's collector, Mr. Anderson, landed at Chefoo on the Shantung Peninsula, in order to commence work in Northern China. Nothing has been done in this region since the time of Consul Swinhoe, and good modern specimens of the species he obtained are required before any further progress can be made.

As may be gathered from the following notes by Mr. Anderson, the Peninsula is highly cultivated, and almost treeless, so that it is naturally poor in Mammalian life. He has nevertheless obtained good series of the few mammals found there, and these will be of much use in the further study of Chinese Mammalogy.

Notes on Shantung.

"I arrived in Chefoo on March 12th, 1907, and was obliged to stay there until the 26th, when I moved into the country eight miles to the south, to remain until April 10th.

"The Shantung Peninsula consists of a complicated series of mountains isolated from other ranges by the broad plain of the Hoang-ho.

"In the region of Chefoo plains and hills alternate, the former being broad, treeless, and though dry are under cultivation for wheat and millet; the latter rise to a height of 1000 feet or more, are steep, rocky, and barren. In general the only trees that occur are diminutive pines, no taller than a man, which are allowed to grow in some parts of the hills; but occasionally in some favoured or sacred spot, a cemetery, or temple land, one finds pines or oaks of larger size. It was such a place that I found eight miles south of Chefoo. Here the steep and rocky hills bore a sparse wood of oak, which flourished under the protection of a Buddhist Temple.

"On April 13th I began work at Ai-san, a mountain about 30 miles west of Chefoo; here I remained till May 1st. Ai-san is an isolated granite crag, 3200 ft. high. Its foothills, in which I took up quarters at an altitude of 1200 ft., are of granite and dry granitic sand, clothed in spots with the usual diminutive pines, and cut by precipitous canyons through which numerous streamlets flow from the mountain. Were it not for this frequency of water the hills would I think be untillable even to the Chinese, but the valleys, canyon bottoms, and sometimes the hillsides are cultivated up to 1200 ft."—*M. P. A.*

1. Erinaceus dealbatus Swinh.

♂. 1461. ♀. 1447. Chefoo.

Originally described from Peking.

"Purchased alive from peasants who had brought them into Chefoo. Said to be not uncommon, but I failed to find them myself. Seems to be strictly nocturnal."—*M. P. A.*

2. Mus confucianus sacer, subsp. n.

♂. 1385, 1387, 1388, 1393, 1394, 1397, 1398, 1399, 1401, 1402, 1403, 1405, 1406. ♀. 1386, 1389, 1390, 1391, 1395, 1396, 1400, 1407, 1408, 1409, 1410, 1411, 1412. Near Chefoo. 300′.

♂. 1424, 1430, 1434, 1440. ♀. 1423, 1431, 1432, 1433, 1443, 1445. Ai-san, 30 miles W. of Chefoo. 1200′.

A female in spirit (No. 1404), with $2-2=8$ mammæ.

A buffy-grey subspecies of *M. confucianus*; tail long-haired, white-tipped.

Size about as in true *confucianus*. Fur soft, not spinous in specimens killed up to 25th April, and probably never so, as the members of this group are not known to change seasonally in this respect, as is the case in *Apodemus speciosus*. General colour above greyish-buffy or clay-colour, darkened by longer black hairs

on the back, clearer buffy on the sides, a buff line edging the white of the belly. Under surface pure sharply-defined white throughout. Ears grey-brown, finely edged with white. Upper surface of hands and feet pure white, the metapodials not darkened. Tail long, very well haired, so that the scales are nearly hidden, the terminal pencil of hairs 5 to 7 mm. in length; its colour brown proximally above, its under surface and its terminal third (occasionally half) white all round, though some shorter hairs on the end of the tail above are also sometimes dark.

Skull as in Fokien specimens referred to *M. confucianus*, but the teeth uniformly larger.

Dimensions of four specimens:—

	Head & body. mm.	Tail. mm.	Hind foot. mm.	Ear. mm.
♂	156	186	31	21
♂ (Type) ...	144	172	29	20·5
♀	141	177	28	21
♀	130	170	29	20·5

Skull of type—greatest length 38 mm.; basilar length 30; greatest breadth 17·2; palatilar length 16·5; palatal foramina 7·1; length of upper molar series 6.

Type. Adult male B.M. No. 8.2.8.8. Original number 1398. Collected 30th March, 1907.

This fine series of specimens is remarkably uniform, there being practically no variation in any important respect. None of the specimens have any trace of the darker markings on the metapodials found in true *M. confucianus*, nor is there any material variation in the degree of whiteness of the tail. Bonhote's *Mus huang* and *M. ling* are both much more fulvous in colour, while neither they nor *confucianus* have the tail so heavily pencilled as it is in *M. c. sacer*.

The belly of these rats would appear to be more yellow in life than it is in skin, judging from the name given them by Mr. Anderson.

"Sulphur-bellied Rat.—Common among the rocks in the temple-woods near Chefoo, rarely met with elsewhere. In the sacred woods it feeds mostly on acorns, leaving large accumulations of the shells in cavities beneath the rocks."—*M. P. A.*

3. Apodemus* agrarius pallidior, subsp. n.

♂. 1365, 1417, 1419. ♀. 1420. Near Chefoo. 300′.
♂. 1422, 1425, 1426, 1428, 1429, 1435, 1436, 1437, 1446. ♀. 1427, 1439. Ai-san. 30 miles W. of Chefoo. 1200′.
♂. 1453, 1460. ♀. 1448. Near Wei-hai-wei. 300′.

On laying out the whole of the fine series of the *A. agrarius* group obtained by Mr. Anderson in the East, there proves to be a

* Kaup, Entwick. Gesch. Nat. Syst. Eur. Thierw. p. 154 (1829).
Type *A. agrarius* (*Mus agrarius* Linn.) antedates *Mieromys* Dehne, 1841.

certain amount of geographical variation, although this is obscured by the individual variation in size and the development of the dorsal stripe already referred to in previous papers of the present series.

The following synopsis indicates the local races into which the eastern forms of *A. agrarius* appear to be divisible:—

A. (Northern.)

a. Colour dark—more or less tawny. Belly hairs washed with pale tawny. Dorsal streak well developed.
Mantchuria. *A. a. mantchuricus* Thos.

b. Colour less rich—approximating to "cinnamon." Belly hairs white-tipped. Dorsal streak variable.
Korea and Quelpart. *A. a. coreæ*, subsp. n.

B. (Southern.)

c. Colour comparatively greyish—approaching wood-brown, the head and fore quarters lighter than the back. Dorsal streak always present ..... Shantung Peninsula. *A. a. pallidior*, subsp. n.

d. Colour more uniform and brownish. Dorsal streak usually obsolete ..... Nanking to N.W. Fokien. *A. a. ningpoensis* Swinh.

The two forms now given new names may be briefly described as follows:—

Apodemus agrarius coreæ.

Summer pelage more or less spiny. General colour above approximating to "cinnamon" of Ridgway, not so ruddy as in *mantchuricus*, more so than in *pallidior*. Belly hairs grey basally, white terminally, not washed with tawny or buffy. Dorsal streak variable, but never of the clear well-defined unspeckled black throughout usually characteristic of true *agrarius*.

Dimensions of four specimens from the typical locality:—

	Head & body. mm.	Tail. mm.	Hind foot. mm.	Ear. mm.
♂	91	81	21	13·5
♀ (Type) ...	110	95	20·5	13
♀	103	81	21	14
♀	95	80	21	13·5

Skull (of type)—greatest length 27·5 mm.; basilar length 22; length of upper molar series 3·8.

Hab. Korea and Quelpart. Type from Min-gyong, 110 miles S.E. of Seoul. 1000′.

Type. Adult female. B.M. No. 6.12.6.74. Original number 654. Collected 24th Nov. 1905.

The two series of this form obtained by Mr. Anderson are enumerated in the papers on the Korean collections.

Apodemus agrarius pallidior.

Size perhaps averaging rather less than in the more northern forms. Fur not spiny, but no specimens seen dated later than May 10. General colour above paler and more greyish-white than in the allied forms, especially on the head and across the

fore-quarters; this pallor appears to be due to the hairs being light, almost whitish subterminally, their extreme tips being of the usual reddish-brown tone. Belly hairs white-tipped. Dorsal streak fairly uniform throughout the series examined, very slightly marked and often obsolete anteriorly, fairly well-defined posteriorly; never so strong as in *agrarius*, *mantchuricus*, and the more strongly marked specimens of *coreæ*, but on the other hand much more evident than in *ningpoensis*, which usually has almost no trace of a stripe.

Dimensions of four specimens:—

	Head & body. mm.	Tail. mm.	Hind foot. mm.	Ear. mm.
♂ (Type) ...	93	100	19	13
♂	89	82	20	13
♀	97	83	20	11
♀	82	77	20·5	13

Skull of type—greatest length 27·5 mm.; basilar length 22·5; length of upper molar series 4·1.

Hab. Shantung Peninsula. Type from near Chefoo. 300′.

Type. Old male. B.M. No. 8.2.8.29. Original number 1419. Collected 5th April, 1907.

This subspecies is no doubt most nearly allied to "*Mus ningpoensis*" Swinh.* (*M. harti* Thos.), which I should now consider as a subspecies of the *Apodemus agrarius* group. It differs, however, both by its paler colour and by the uniform presence of a dorsal stripe, this being but rarely perceptible in the more southern animal.

"Caught usually in traps set under rocks near water-courses. At Ai-san their ears were nearly always diseased, and I think thereby shortened."—*M. P. A.*

4. Cricetulus triton de Wint.

♂. 1415, 1416, 1418. ♀. 1366. Chefoo, Shantung. 100′.
♂. 1454. ♀. 1450, 1451. Wei-hai-wei. 300–400′.

These welcome examples, practically topotypes, of the hitherto little-known *C. triton* vary unexpectedly in size among themselves, but none of them equal in tooth-length, and only one very old specimen in hind-foot-length, the immature type of *C. nestor*, discovered by Mr. Anderson in Korea. Their tails also show an unusual amount of variation in length.

A specimen referable to *C. triton* has recently been presented to the Museum by Mr. E. B. Howell, who trapped it at Tientsin, thus carrying its known range to the west of the valley of the Hoang-ho.

Curiously enough, both Mr. Anderson and Mr. Howell note a predilection on the part of these animals to make their burrows in human grave-mounds, on the south side of which they sink a perpendicular hole.

* P. Z. S. 1870, p. 637; *cf.* Bonhote, P. Z. S. 1905, ii. p. 397.

5. Cricetulus griseus M.-Edw.

♂. 1355, 1360, 1361, 1362, 1363, 1367, 1368, 1372, 1373, 1374, 1376. ♀. 1356, 1358, 1359, 1364, 1369, 1370, 1371, 1375, 1377, 1381. Chefoo. Sea-level.

♂. 1442. ♀. 1438, 1441. Ai-san, 30 miles W. of Chefoo. 1200′.

♂. 1452, 1458. Near Wei-hai-wei. 300′.

This fine series is very uniform in general colour and in the development of the dorsal line, which is as distinct in the young ones as in the adult. The following are the flesh-measurements of four of the largest examples:—

	Head & body. mm.	Tail. mm.	Hind foot. mm.	Ear. mm.
♂	100	27	15·5	15
♂	97	28	16	15
♀	91	28	15·5	16
♀	86	29	15·5	16

Mr. Howell also obtained this species at Tientsin, and there were two examples in the collection from N. Shantung presented by Mr. Styan and worked out by de Winton. The latter used for them the name of *C. obscurus*, but *griseus* comes first in Milne-Edwards's book, and even if the two are different, which is most doubtful, *griseus* should, for geographical reasons, be the name for the little hamster of Shantung.

"Although not common this was almost the only mammal in the fields about Chefoo. Its burrows were most often in small banks in the gardens, but sometimes occurred between the rows in wheat fields."—*M. P. A.*

6. Lepus swinhoei Thos.

Lepus tolai Swinh. P. Z. S. 1870, pp. 449, 450.

♂. 1382, 1383, 1384, 1392, 1421.

♀. 1357, 1379, 1380, 1414. Chefoo. 300′.

♂. 1444 (young). Ai-san, W. of Chefoo. 1200′.

♂. 1455–7 (young), 1459. ♀. 1449. Near Wei-hai-wei. 300′.

These specimens are all of the paler type of coloration described by Swinhoe as characterising his third (♀) specimen, though they vary among themselves in this respect.

"Common near Chefoo and near Wei-hai-wei, but rare near Ai-san (where there are wolves). Where common this hare is conspicuous, for although the body is much the colour of the soil, the white tail is an advertisement. It is not wild, but will stop again and again if one whistles sharply. This hare has a voice of some strength, as wounded ones showed by crying out plaintively, or sometimes threateningly, as I approached. I found the flesh very palatable, and many are killed for the Chefoo market."—*M. P. A.*